

Translation

PATENT COOPERATION TREATY

PCT/EP2003/003592



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2002DE417	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/003592	International filing date (day/month/year) 07 March 2003 (07.03.2003)	Priority date (day/month/year) 20 April 2002 (20.04.2002)
International Patent Classification (IPC) or national classification and IPC B03D 1/01, 1/008		
Applicant CLARIANT GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 19 September 2003 (19.09.2003)	Date of completion of this report 15 June 2004 (15.06.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/003592

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
 pages _____ 1-5 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____ 1-10 _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/03592

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims	1-10	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

2. Citations and explanations

The following documents are relevant to the present application; the same numbering will be used throughout the procedure:

D1: GB-A-2 207 619 (UNILEVER PLC)

8 February 1989 (1989-02-08)

D2: US-A-4 045 335 (ADAMS BEN E ET AL)

30 August 1977 (1977-08-30), cited in the application

D3: FR-A-962 964 (POTASH COMPANY OF AMERICA)

28 June 1950 (1950-06-28)

D4: DE-A-1 144 214 (WINTERSHALL AG)

28 February 1963 (1963-02-28)

D5: US-A-4 563 221 (TIOXIDE GROUP PLC)

7 January 1986 (1986-01-07).

(The present report does not necessarily make reference to all the above documents.)

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1. PCT Article 33**1.1 PCT Article 33(2) (Novelty)****1.1.1 Claim 1 satisfies the requirements of PCT**

Article 33(2) since none of the prior art citations discloses the use of a mixture of at least one fatty acid alkyl salt and one branched fatty acid as a collector in the flotation of potash, as specified in claim 1.

1.1.2 Claims 2-9 describe special embodiments of the use as per claim 1 and, in consequence, also satisfy the requirements of PCT Article 33(2).

1.1.3 Claim 10 satisfies the requirements of PCT

Article 33(2) since, in contrast to the claimed (mono)amine salt, the fatty amine salt referred to in D5 (see example 2) is a diamine salt

1.2 PCT Article 33(3) (Inventive step)

1.2.1 Document D4 is considered to be the prior art closest to claims 1 and 10 because it discloses the use of a mixture of primary fatty acid amines and oleic acid in the flotation of kieserite for separating kieserite and potash.

1.2.2 Claim 1 differs from D4 in that said claim gives a more specific definition of the type of fatty acid amine and in that a branched fatty acid (for example isostearic acid) is used instead of oleic acid. Thus, a person skilled in the art faces the problem

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of providing a fatty acid amine and a fatty acid for a flotation agent and thereby improving the KCL yield in the flotation of potash.

1.2.3 Document D2 which refers to D4, *inter alia*, discloses a flotation agent comprising a combination of oleic acid and fatty acid amines as a flotation agent, said combination coming under the general formula for fatty acid amines according to claim 1 and the fatty acid amines also including *inter alia* stearylamine acetate. However, for a person skilled in the art there is nothing to suggest using a branched fatty acid instead of oleic acid and, in this way, achieve the advantages mentioned in the description (see the examples on page 5).

1.2.4 Thus, the subject matter of claim 1 can be considered to involve an inventive step.

In consequence, **claim 1 satisfies the requirements of PCT Article 33(3).**

1.2.5 **Claims 2-9 describe special embodiments of the use as per claim 1 and, therefore, likewise satisfy the requirements of PCT Article 33(3).**

1.2.6 For the same reasons as claim 1, **claim 10, which is directed to a composition that is a suitable flotation agent, satisfies the requirements of PCT Article 33(3).**

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1.3 PCT Article 33(3) (Industrial applicability)

1.3.1 Industrial applicability is acknowledged for the
subject matter of claims 1-10 in its entirety.